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PARASITES OF WESTERN AUSTRALIA
VIII
MYOBIIDAE PARASITIC ON MARSUPIALS (ACARI: PROSTIGMATA)

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and

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ABSTRACT

The following new taxa are described from Australian Marsupials: *Australomyobia phascogale* sp.n. from *Phascogale calura; A. dasyurus* sp.n. from *Dasyurus hallucatus; A. dasycercus antechinus* subsp.n. from *Antechinus bilarni.* The male and the immature stages of *Australomyobia necopina* (Domrow, 1973), so far unknown, and *Acrobatobia queenslandica* Fain and Lukoschus, 1976 known only from a preliminary description, are described in detail and figured. A key to the *Australomyobia* spp. is given.

INTRODUCTION

In a previous paper we have studied the species of Myobiidae parasitic on bats. We deal now with the species that live on marsupials.

So far three species of Myobiidae have been described from Australian marsupials: *Australomyobia necopina* (Domrow, 1973), *Australomyobia dasycercus* Fain, 1973 and *Acrobatobia queenslandica* Fain & Lukoschus, 1976.

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In this paper we describe 2 new species and 1 new subspecies of the genus *Australomyobia* from various marsupials in Australia, mainly in the Western regions and we complete the description of *A. queenslandica,* which had only been briefly described.

FAMILY MYOBIIDAE Megnin, 1877
SUBFAMILY MYOBIINAE Megnin, 1877
TRIBE AUSTRALOMYOBIINI Fain, 1973

Genus *Australomyobia* Fain, 1973

Recently Fain (1978) has given a new and more complete description of this genus. We will only add here two remarks: **1)** In the tritonymphs the legs I are symmetrical and the two pairs of coxal I setae are thick striated spines. **2)** In the females the *l 5* setae are thin and short and situated close to the *l 4*. In the males these setae are normally situated and in the nymphs they are distinctly ventral. **3)** In the deutonymphs the trochanters IV bear a seta as in the tritonymph.

Type species: *Australomyobia dasycercus* Fain, 1973.

Key to the genus *Australomyobia*
- Females -
(N.B. The female of *A. dasyurus* is unknown)

1. Posterior claw of legs II-IV 12-15μ long. Base of *sc i* setae 4-6μ thick. Base of setae *d 1, d 2, l 2* with well-developed ventral expansion. Femur I 36μ thick 2

   Posterior claw of legs II-IV 8-10μ long. Base of *sc i* setae 15-18μ thick. Base of setae *d 1, d 2, l 2* without ventral expansion. Femur I 42-48μ thick 3

2. The *g 1* setae are 120μ long and 48μ apart ..... *A. necopina* (Domrow, 1973)
   The *g 1* setae are 80μ long and 12μ apart ..... *A. phascogale* sp. nov.

3. Setae *sc i* progressively attenuated posteriorly. The *g 1* are 65μ apart. Setae *ic 4* and *cx IV* not distinctly inflated basally ..... *A. dasycercus dasycercus* Fain, 1973

   Setae *sc i* abruptly narrowed posteriorly. The *g 1* are 55μ apart. Setae *ic 4* and *cx IV* distinctly inflated basally ..... *A. dasycercus antechinus* ssp.nov.

- Males -

(N.B. The male of *A. dasycercus dasycercus* and of *A. dasyurus* are unknown)

1. Genital plate bearing 3 external pairs of small setae and 3 internal pairs of much smaller and indistinct setae 2

   Genital plate bearing 3 external pairs of unequal conical spines, the posterior one being 9-10μ long and 3,2 to 3,5μ thick, and 3 internal pairs of very small setae ..... *A. dasycercus antechinus* ssp. nov.

2. Genital plate twice as wide (16μ) in its anterior half than in its posterior half (8μ), total length 21μ. The *d 1* and *d 2* without ventral expansions ..... *A. necopina* (Domrow, 1973)

   Genital plate oval, longer (18μ) than wide (15μ). The *d 1* and *d 2* setae with ventral expansions ..... *A. phascogale* sp. nov.

DESCRIPTION OF THE SPECIES

1. *Australomyobia necopina* (Domrow, 1973)
   Archemyobia necopina Domrow, 1973: 131
   Australomyobia necopina, Fain, 1978: 195 comb.nov.

Fain (1978) has given new figures of the female of this species. We give here the first description of the male and the immature stages.

Male (Fig. 5): Body 345μ long and 210μ wide. **Dorsum:** genital orifice situated at 15μ behind the *sc e* setae. There are 6 pairs of genital setae: 3 pairs of externals 5-6μ long and 3 pairs of internals much smaller. Penis 130μ long. The *v i* are very small; the *sc i* are thicker and longer (18μ) and situated close to the *sc e*. The *d 1* are shorter (63μ) than the *d 2* (70 to 87μ). **Venter:** as in the female, except that the long pair of *g 1* setae are absent here and that the *l 5* are long and terminal. Legs and gnathosoma as in the female.

Tritonymph: our specimen has been collected on the typical host from Australia (animal in the Leiden Museum). Idiosoma 485μ long and 270μ wide. **Dorsum:** *v e, sc e* and *sc i* with a thick, striated and toothed base, and a very narrow apical part. The *v i* are small and situated between the *sc i*. The *d 1* to *d 5* and *l 1* to *l 5* are present. **Venter:** coxal setae 2-2-1-0; the coxals I are striated, shell-shaped. The *ic 2, ic 3* and *ic 4* are stout and 33μ, 34μ and 45μ long respectively. The *l 5* is ventral and 120μ long. Legs I symmetrical. Legs II-IV with a 2 unequal claws, trochanters with 1 setae. Trochanter 1V with 1 seta.

Deutonymph: from the same host as the tritonymph. Idiosoma 325μ and 205μ wide. Similar to the tritonymph but the coxal setae are 2-1-0-0, the *ic 4* are only 27μ long, the *l 5* are 120μ long.

Protonymph: same origin as tritonymph. Idiosoma 300μ x 195μ. Similar to the deutonymph except for the following characters: coxal setae 1-0-0-0; the *ic 4* are missing; there are no setae on the trochanters II to IV. The *l 5* are 120μ long.

Larva: this specimen was collected on the typical host from Upper Allyn. Idiosoma 190μ x 135μ. Leg I-III as in protonymph. Idiosomal setae as in protonymph except that *d 4,* coxal I, *ic 2* and *ic 3* are missing.

Prelarva: the prelarva still included in the egg shell, is completely striated except in the anterior part of the dorsum which is bare. At the base of this bare area is a small median hook-like formation whose base is attached to two muscles inserted anteriorly. Ventrally, the anterior extremity presents a small rounded depression in which two short conical and sclerotized appendages are visible. These appendages are associated with deep-situated muscles and glandular organs.

Host and localities

1. This species has been described from female specimens collected on *Antechinus flavipes* (Waterhouse, 1838) (Dasyuridae), from Mount Magnificent, Australia. The holotype of this species is in the Australian National Insect Collection, Canberra.

   The junior author collected several immatures and one male that belong to that species from the typical host specimen conserved in the Leiden Natural History Museum, collected in Australia, in March 1884.

   From the same host, at Upper Allyn, N.S.W. 1.IX.1957, the junior author collected 4 females and 34 immature stages of the same species.

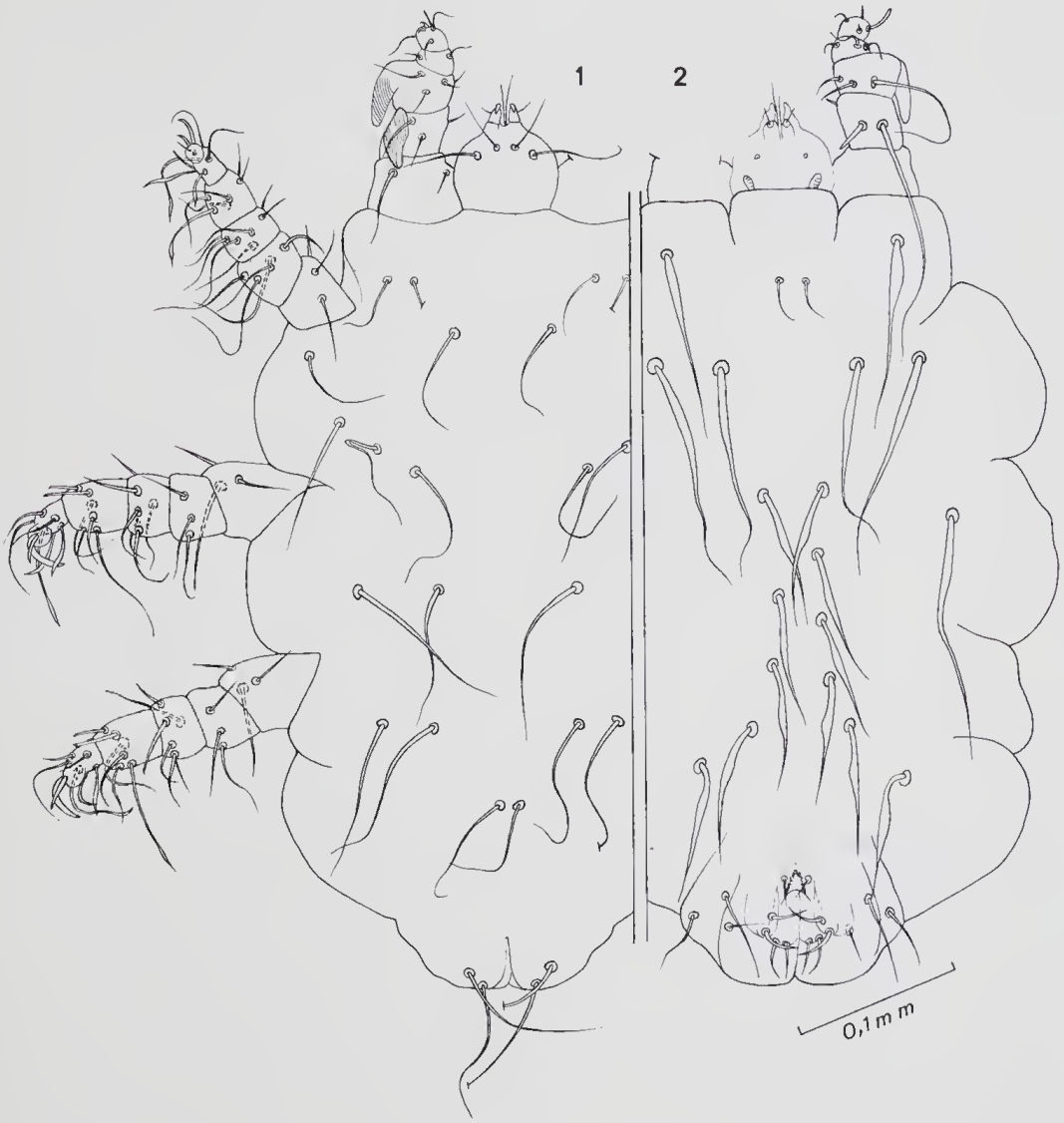
2. From Dr R. Domrow we received 2 nymphs from *Antechinus stuartii* Macleay, 1841, Powelltown, Victoria, 15.II.1974.

2. *Australomyobia phascogale* sp. nov.

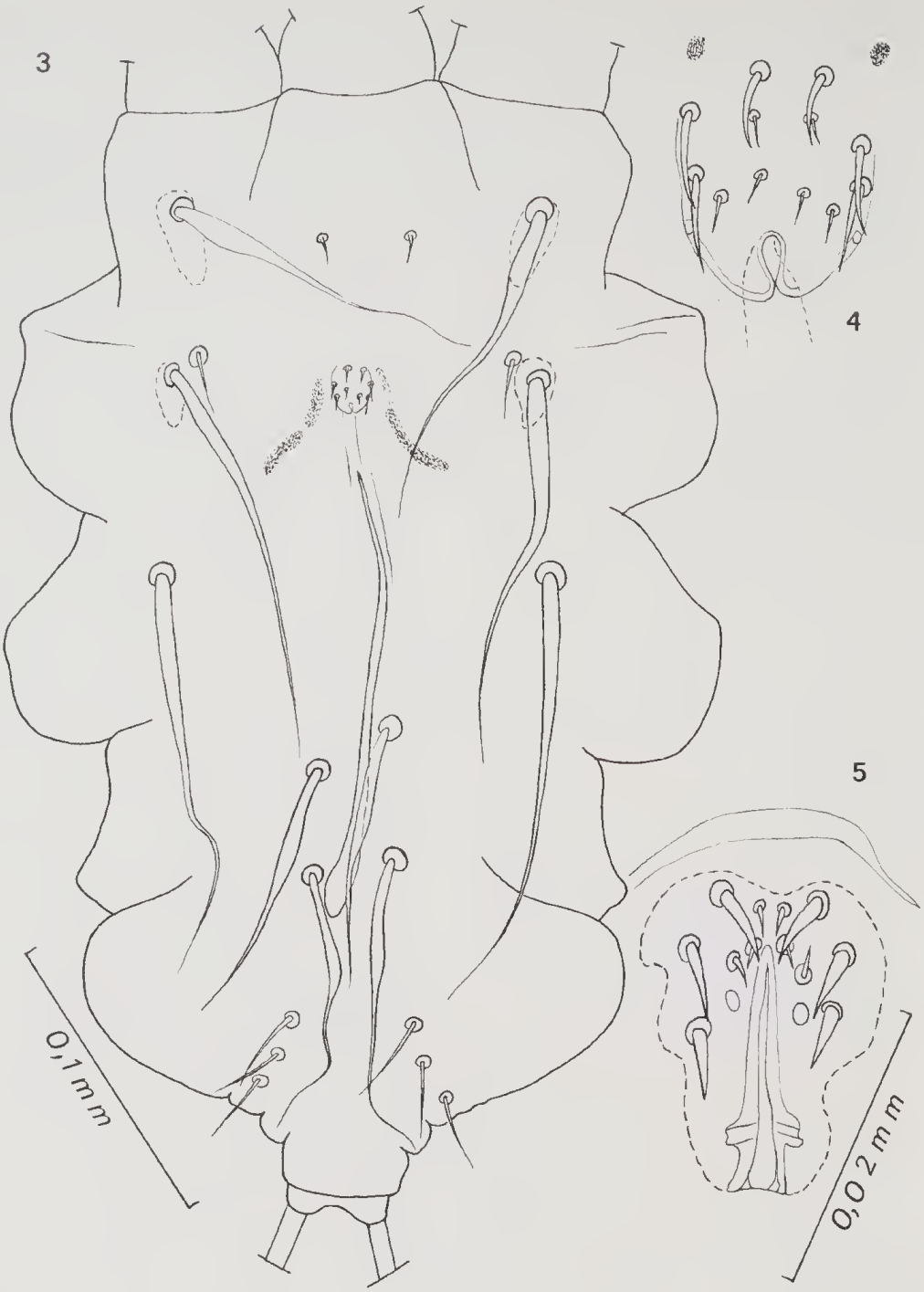
In the female of this species the small claws of legs II to IV are relatively long as in *A. necopina* (12μ, 15μ, 15μ respectively). This species is however distinguished from the latter by the shape and the situation of the chaetotaxy. On the ventral surface the *g 1* setae are much closer together (distance 12μ instead of 48μ in *A. necopina*); on the dorsum most of the setae show an inflation of the ventral surface more pronounced than in *A. necopina.* In this new species the setae of the legs are stouter than in the other species of the genus. The male is distinguished from those of *A. necopina* by a slightly different shape and structure of the genital plate, the greater size of the body, the different length and shape of some setae.

Female (Fig. 1-2): Holotype 525μ long and 310μ wide. **Dorsum:** the *v e, sc e, sc i, l 1, d 1* and *d 2* are 123μ, 140μ, 118μ, 135μ, 80μ and 75μ. Most of these setae are inflated ventrally in the posterior half of their thick basal part.

Venter: the *ic 4* and *cx IV* are not inflated basally. The *g 1* are 12μ apart and 80μ long. Legs: claws as in *A. necopina* but the small claws are a little longer than in that species. Leg I 120μ long (from top of tarsus to base of trochanter); femur I 36μ thick.



Figs 1-2: *Australomyobia phascogale* sp.n. Holotype female, venter and dorsum.



Figs 3-5: (figs 3-4) *Australomyobia phascogale* sp.n. Allotype male: (fig. 3) - dorsal view; (fig. 4) -genital area. (Fig. 5) *Australomyobia necopina* (Domrow). Male: genital area.

Male (Fig. 3-4): Allotype 390μ long and 225μ wide. **Dorsum:** genital plate longer than wide, bearing 6 pairs of small or very small setae. Penis 145μ long. The *sc i* setae are thin and 15μ long. The setae *d 1* and *d 2* are 75μ and 90μ long respectively and they are inflated as in the female. Legs as in the female.

Host and locality

On *Phascogale calura* Gould, 1844, Lake Grace, 16.XII.1960 (host n° 6163, in the Western Australian Museum) (Holotype and 7 paratypes female, allotype and 2 paratypes male, 26 immature paratypes).

Types in the Western Australian Museum, Perth. Paratypes in Field Museum of Natural History, Chicago; Department of Zoology, Catholic University, Nijmegen, Netherlands; Institute of Tropical Medicine, Antwerp, Belgium.

3. *Australomyobia dasycercus* Fain, 1973
Australomyobia dasycercus Fain, 1973: 615; 1978: 195

This species has been described from *Dasycercus cristicauda,* Charlotte Waters, Central Australia (host n° 97.1.3.2., in the British Museum). It was only known from the female. The holotype is in the British Museum.

We have found on *Antechinus bilarni* several specimens which agree rather closely with *A. dasycercus,* except for several small differences, which justify the erection of a new subspecies.

Australomyobia dasycercus ssp. *antechinus* subsp. nov.

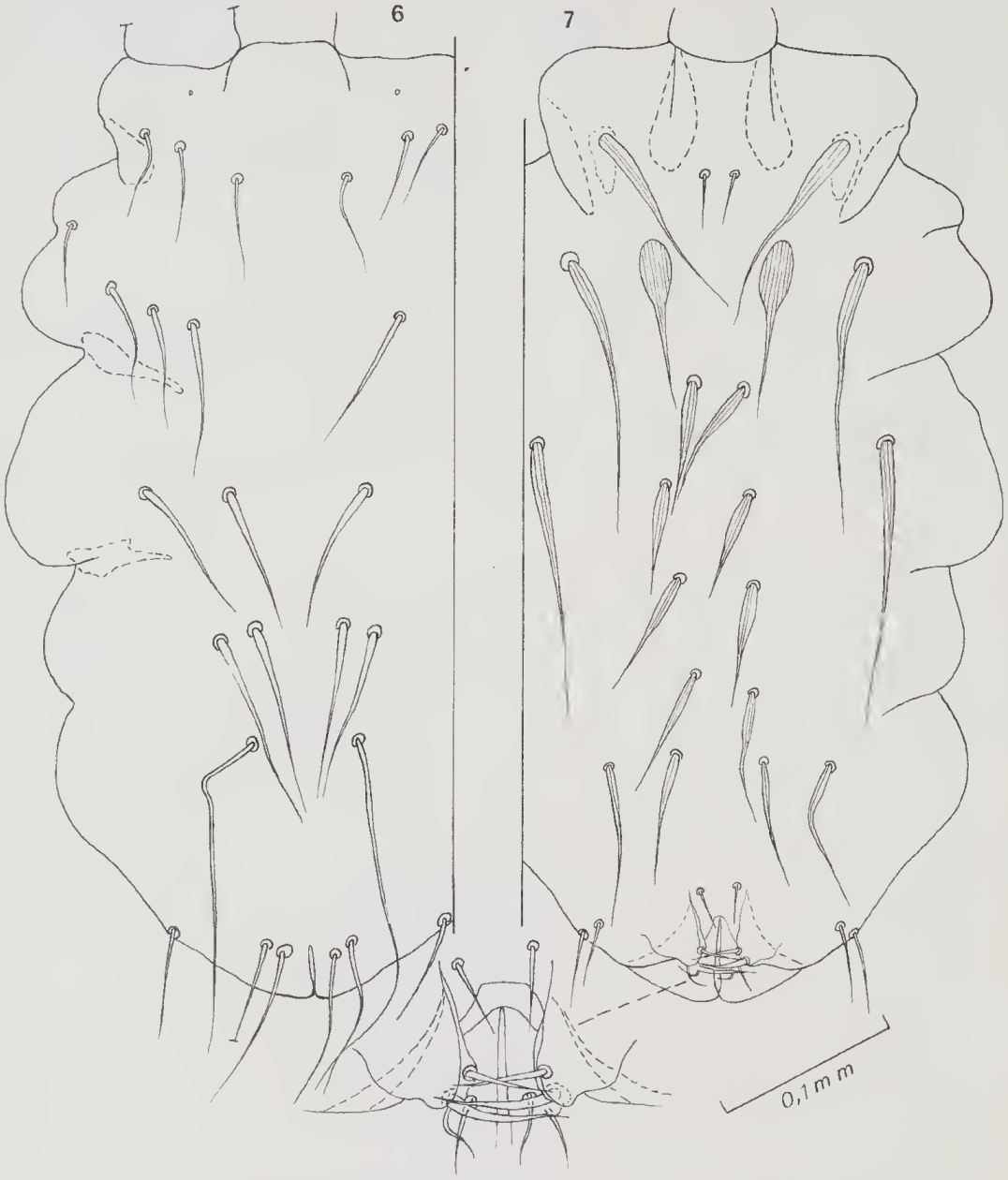
This subspecies is distinguished from the typical form in the female by the shape of the *sc i* setae which are more abruptly narrowed in their median part; the shape of the *ic 4* and *cx IV* setae more inflated basally; the situation of the *ic 4* and of *g 1* more close together; and the smaller length of the *d 1* and *d 2* setae.

Female (Fig. 6-7): Holotype 520μ long and 315μ wide. **Dorsum:** the setae *v e, sc e, sc i, l 1, d 1, d 2* are 120μ, 150μ, 90μ, 150μ, 72μ and 60μ long respectively. The basal half of *sc i* setae is 17-18μ thick. **Venter:** coxal setae 2-3-1-1. All the *ic* are long. The *ic 4* are 42μ apart. The *g 1* are very long (180μ). The small claws of legs II, III and IV are equal or subequal and 9 to 10μ long. Leg I 120μ long (from tip of tarsus to base of trochanter); femur I 21μ thick. **Chaetotaxy of the legs II-IV:** Trochanters 3-3-3. Femora 5-3-3. Genua 7-7-7. Tibiae 6-6-6. Tarsi 7-6-6.

Male (Fig. 8-9): Allotype 420μ long and 210μ wide. **Dorsum:** genital orifice at 5-10μ behind the level of *sc e* setae. Genital plate bearing 3 internal pairs of very small setae and 3 external pairs of thick but short spines. Penis 170μ long, very thin apically and with one loop in its apical third. The *d 1* and *d 2* setae are 75μ and 105μ long respectively. The *d 3, d 4* and *l 4* are very thin and subequal in length (28-34μ). **Venter:** as in the female except that the *g 1* are missing and that the *ic 4* are much wider apart (distance *ic 4 - ic 4 = 60μ*).

Host and locality

On *Antechinus bilarni* Johnson, 1964, Beverley Springs, 20.IX.1976 (host n° 2746) (holotype and 1 paratype female, allotype and 2 paratypes female, and 17 immature paratypes); 22.IX.1976 (host n° 2789) (16 immature paratypes). From Brooking Springs, 30.IX.1970 (host n° 2845) (20 immature paratypes).



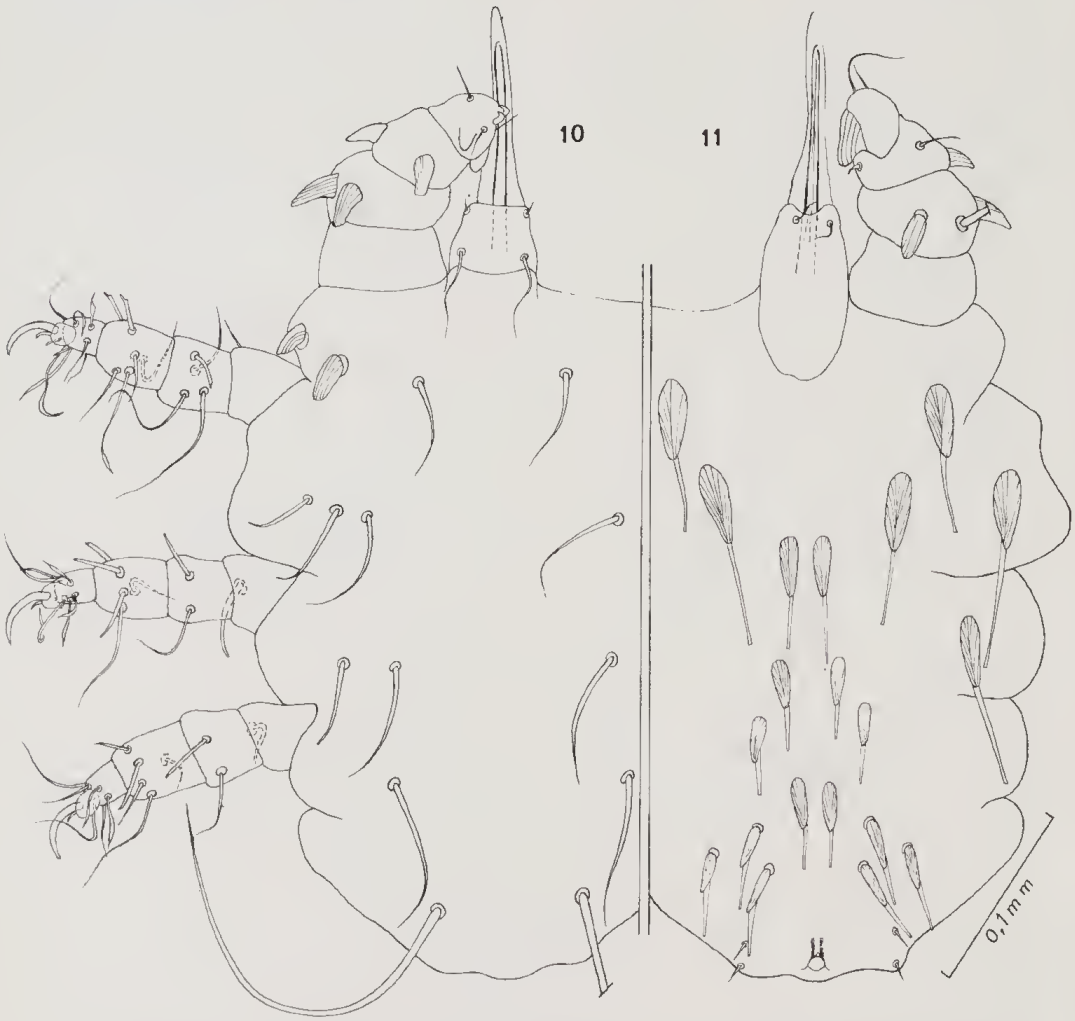
Figs 6-7: *Australomyobia dasycercus antechinus* ssp.n. Holotype female, venter and dorsum.

Figs 8-9: *Australomyobia dasycercus antechinus* ssp.n. Allotype male: (fig. 8) - dorsal view; (fig. 9) - genital area.

4. *Australomyobia dasyurus* sp. nov.

We have found on *Dasyurus hallucatus,* from two localities in Western Australia, 39 nymphs (tritonymphs and deutonymphs) belonging to the genus *Australomyobia.* These specimens differ from the trito- and deutonymphs of *A. necopina* and *A. dasycercus* by the following characters: the shape of the *v i* setae which are very thick, striated and similar to the *v e* setae, the larger the size of the body and the greater length of the *ic* setae. We think, therefore, that these specimens belong to a new species.

Tritonymph (Fig. 10-11): Holotype 390μ long and 270μ wide (idiosoma). Dorsal setae thick, striated and toothed. The *v i* setae are similar to the *v e* and situated between the *sc i.* Same number of dorsal setae as in tritonymph of *A. necopina.*



Figs 10-11: *Australomyobia dasyurus* sp.n. Holotype tritonymph, venter and dorsum.

Venter: coxal setae 2-2-1-0. The coxals I are thick and striated. The *ic 2 - ic 4* are thick and 60μ, 72μ and 70-75μ respectively.

Deutonymph: Idiosoma 348μ long and 290μ wide. Characteristics identical to the tritonymph, except that the coxal setae are less numerous 2-1-0-0.

Hosts and localities

From *Dasycercus hallucatus* Gould, 1842, from Mitchell Plateau, 20-21.X.1976 (animal n° 3041 and 3056) (holotype, 5 paratype tritonymphs, and 1 paratype deutonymph); from Mount Hart, 11.IX.1976 (animal n° 2691) (29 deutonymph paratypes).

Genus *Acrobatobia* Fain and Lukoschus, 1976

This genus is distinguished from the genus *Australomyobia* in the female, by the following characters:

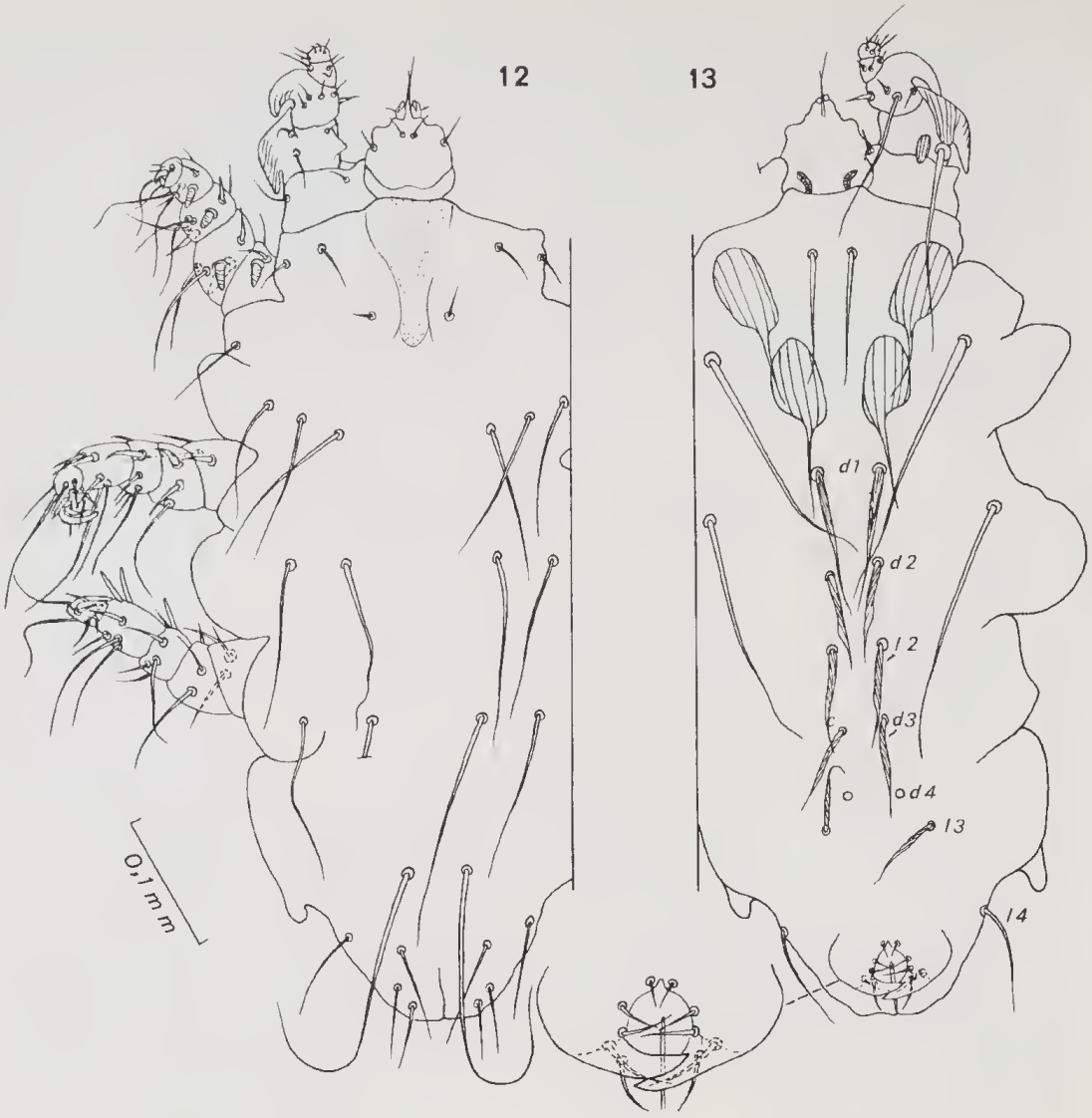
1. Tarsus and tibia I distinctly reduced.
2. The *v e* and *sc i* foliate-striate, very large at their base, and with a very fine and short posterior prolongation.
3. Genital hooks abnormally large.
4. All the segments of leg II, except the tarsus, bear one or two strongly striated spines. Legs III-IV with spines on some segments.
5. Claws II very small and subequal. Claws III-IV strongly unequal.
6. Presence of a pair of short, cylindrical cuticular prolongations on the lateral surface of the opisthosoma.

In the tritonymphs and deutonymphs the setae *v e* and *sc i* are identical to those of the female. The deutonymphs have only one pair of coxals I. Trochanteral setae of legs II-IV in tritonymph 1-2-2; in deutonymph 1-2-1.

Type species: *Acrobatobia queenslandica* Fain and Lukoschus, 1976.
Acrobatobia queenslandica Fain and Lukoschus, 1976: 180

Only the female and immatures are known.

Female (Fig. 12-13): Holotype 645μ long and 330μ wide. **Dorsum:** setae *v e* and *sc i* foliate-striate with a base 33-36μ wide, and a very narrow posterior prolongation. The *v i* 90μ long, the *sc e* and *l 1* narrow and long. The *d l, d 2, l 2* with a distinct ventral expansion. Gential lobes very large. **Venter:** coxal setae 2-3-1-1. The *ic 2* to *ic 4* and the coxals II-IV are very long. The *g 1* are 240μ long. The opisthosoma bears laterally a pair of short, cylindrical cuticular prolongations. Legs II: with a big striated spine on the trochanter, 2 striated spines on femur and genu and one striated spine on the tibia. Leg I 135μ long (from base of trochanter to apex of tarsus), femur I 45μ wide.



Figs 12-13: *Acrobatobia queenslandica* Fain & Lukoschus. Holotype female, venter and dorsum.

Host and locality

On *Acrobates pygmaeus* (Shaw, 1793) from Armidale, Australia, 1916 (animal in the Smithsonian Collection) (holotype female); from Queensland, 11.VII.1893 (animal in the Hamburg Museum Collection (9 nymphs) and from Sydney, 27.V.1911 (animal in the Hamburg Collection) (4 nymphs).

Type: in the U.S.N.M.

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